

## Monofrax<sup>®</sup> E Fused Cast Refractory

### Product Description

The exceptional high temperature corrosion resistance of Monofrax<sup>®</sup> E refractory makes it ideal for lining furnaces melting unusually corrosive glasses and slags where coloration potential of its chromic oxide content is not of concern.

This refractory's structure is relatively low in porosity and has very low permeability due to the absence of interconnecting porosity. In laboratory tests and field experience resistance to thermal shock has provided to be superior to that of bonded chromic oxide refractories.

### Manufacturing Description

Monofrax<sup>®</sup> E chrome-spinel refractory is formed by casting a fusion of oxides from an electric arc furnace into graphite molds. Its structure is comprised of an intergrowth of two crystalline phases with a minor glassy matrix. The major crystalline phase, approximately 60%, is a complex spinel (Mg, Fe) O-(Cr, Al, Fe)<sub>2</sub>O<sub>3</sub> which envelopes the secondary R<sub>2</sub>O<sub>3</sub> phase, approximately 35%, consisting of solid solution of (Cr, Fe, Al)<sub>2</sub>O<sub>3</sub>. The minor glassy matrix consists of less than 5% of the structure.

### Typical Chemistry

Cr <sub>2</sub> O <sub>3</sub> .....	75%
Al <sub>2</sub> O <sub>3</sub> .....	8.5%
MgO.....	8.5%
FeO.....	6%
SiO <sub>2</sub> .....	2%
Alkalis.....	0.2%
Other.....	0.6%



### Typical Physical Properties:

Bulk Density - lb./ft <sup>3</sup> (gm/cc)	
Casting size less than 300 lb. ....	260 (4.17)
Greater than 300 lb. ....	265 (4.25)
% apparent porosity: .....	<10%
Modulus of rupture - psi .....	5600

### Typical Applications

- Throat constructions and other exceptionally high wear areas of wool fiberglass furnaces, including melter sidewalls, forehearth, stacks and port sills.
- Hot face lining for slagging coal gasifiers
- Slag runners
- Linings for nuclear waste encapsulation furnaces



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